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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,122	09/28/2001	Masataka Tamura	016910-0475	1777

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EXAMINER

JOHNSON, JONATHAN J

ART UNIT PAPER NUMBER

1725

DATE MAILED: 07/25/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/965,122

Applicant(s)

TAMURA ET AL.

Examiner

Jonathan Johnson

Art Unit

1725

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2003.
- 2a) This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13, 15, 17-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 17-19 and 21 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☒ Claim(s) 1-13, 15 and 17-21 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 17, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones (6,060,686) in view of Applicant's Admitted Prior Art (AAPA). With respect to Claim 13, Jones teaches irradiating a condensed laser beam generated by a laser source to a certain point of an underwater workpiece (Figure 2, item 18b and 12a); supplying gas to the certain point from a nozzle having a gas exit (Figure 2, Item 22a); the nozzle having an area surround the gas exit that extends to the surface of the workpiece for keeping the supplied gas between the nozzle and the workpiece (Column 3, Lines 25-40) and where the nozzle is formed as a disk having a gas exit at the center thereof (Figure 2, item 20c and Column 3, Lines 25-40). AAPA teaches supplying a welding wire from within the nozzle to the certain point (compare Figure 1, item 8 with Figure 2b, Item 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the laser of Jones to utilize a welding wire from within the nozzle in order to ensure that the welding wire is provided to the laser spot (see Specification Paragraph 6).

With respect to Claim 17, the teachings of Jones and AAPA are the same as relied upon in the rejection of Claim 13. Jones teaches irradiating the workpiece at an angle to the workpiece (Figure 1, item 18b).

With respect to Claims 19 and 21, Jones teaches irradiating a condensed laser beam generated by a laser source to a certain point of an underwater workpiece (Figure 2, item 18b and 12a); supplying gas to the certain point from a nozzle having a gas exit (Figure 2, Item 22a); the nozzle having an area surround the gas exit that extends to the surface of the workpiece for keeping the supplied gas between the nozzle and the workpiece (Column 3, Lines 25-40) and adjusting a gap between the nozzle and the workpiece (Column 3, Lines 45-50); where the gap adjuster includes a sliding member (Figure 1, item 24) and where the nozzle is formed as a disk having a gas exit at the center thereof (Figure 2, item 20c and Column 3, Lines 25-40).

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jones as applied to Claim 13 above, and further in view of Cruickshank et al. (3,632,955). Cruickshank et al. teach separating visible light by a dichroic mirror and inputting the separated visible light into an image sensor (Figure 10, items 66 and 67). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the laser of Jones to utilize the mirror and sensor in order to view the welding with complete operator safety (see Cruickshank et al. Column 5, Lines 30-60).

***Allowable Subject Matter***

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: The prior art of record does not suggest or teach an underwater laser processing method, particularly where the nozzle has a circular groove on the surface facing the workpiece.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 703-308-0667. The examiner can normally be reached on M-Th 7AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

jj *jj*  
July 17, 2003

*Tom Dunn*  
TOM DUNN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700